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(96)

NEW SET OF CLAIMS

1. Process to prepare a microcrystalline wax and a middle distillate fuel by
(a) hydrocracking/hydroisomerisating a Fischer-Tropsch product, wherein weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product is at least 0.4 and wherein at least 30 wt% of compounds in the Fischer-Tropsch product have at least 30 carbon atoms and wherein the conversion in step (a) is between 25 and 70 wt%,
(b) performing one or more distillate separations on the effluent of step (a) to obtain a middle distillate fuel fraction and a microcrystalline wax having an initial boiling point of between 500 and 600 °C.

2. Process according to claim 1, wherein at least 50 wt% of compounds in the Fischer-Tropsch product have at least 30 carbon atoms.

3. Process according to any one of the claims 1-2, wherein the microcrystalline wax as obtained has a congealing point of between 95-120 °C and a PEN at 43 °C as determined by IP 376 of more than 0.8 mm.

4. Process according to claim 3, wherein the PEN at 43 °C is more than 1.0 mm.

5. Process according to any one of claims 1-4, wherein the wax obtained in step (b) is subjected to an additional de-oiling step to obtain a wax having an oil content of between 0.1 and 2 wt%.

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NEW PAGE 2

Senden M M G: "The Shell Middle Distillate Synthesis Process: commercial plant experience and outlook into the future", Petrole et techniques, Association Francais des Techniciens du petrole. Paris, FR, no 415, 1 July 1998 (1998-07-01), pages 94-97, XP000771962 ISSN: 0152-5425, described the Shell MDS process which yields wax products by hydrogenation of a Fischer-Tropsch product and middle distillate products by hydrocracking a Fischer-Tropsch product.

Sie S T et al, "Conversion of natural gas to transportation fuels via the Shell Middle distillate synthesis process (SMDS)", Catalysis Today, Amsterdam, Vol. 8, 1991, pages 371-394 describes a moderate hydrocracking of a Fischer-Tropsch product yielding middle distillates.

An almost similar process as the SMDS process disclosed in said presentation is disclosed in the recently published WO-A-0174969. In the disclosed process a Fischer-Tropsch product is subjected to a hydro-processing step at low conversion. The waxy products as obtained in the examples of said publication are characterized by means of a Needle Penetration Value according to ASTM D-1321. Because the temperature at which said value is measured is not provided no assessment of the softness of these products can be made. Furthermore a melting point is mentioned without providing a method on how this property was measured.

A disadvantage of the disclosed process in WO-A-0174969 or the disclosed SMDS process line-up is that a dedicated wax hydroconversion step is needed to

prepare the wax products next to a dedicated middle distillate hydroconversion step to prepare middle distillates from a Fischer-Tropsch synthesis product.

The object of the present invention is to integrate the process of preparing soft waxes having a high congealing point with the production of middle distillate fuels having good cold flow properties.

The following process achieves this object. Process to prepare a microcrystalline wax and a middle distillate fuel by

(a) hydrocracking/hydroisomerisating a Fischer-Tropsch product, wherein weight ratio of compounds having at least 60 or more carbon atoms and compounds having at least 30 carbon atoms in the Fischer-Tropsch product is at least 0.4 and wherein at least 30 wt% of compounds in the Fischer-Tropsch product have at least 30 carbon atoms and wherein the conversion in step (a) is between 25 and 70 wt%,

(b) performing one or more distillate separations on the effluent of step (a) to obtain a middle distillate fuel